SHARP SERVICE MANUAL

GF-4545H
GF-4545E

ATSM881127RCS

GF-4545H
GF-4545E

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

SPECIFICATIONS

GENERAL

Type:	Portable stereophonic cassette tape recorder with FM/MW/LW 3-band radio
Power source:	A.C. 110V ~ 120V/220V ~ 240V, 50/60Hz D.C. Internal (Batteries): (six UM/SUM-1 or R20) (GF-4545H) A.C. 240V, 50/60Hz D.C. 9V (six HP2) (GF-4545E)
Speakers:	10cm Woofer x 2 : Horn type Tweeter x 2
Output Power: (DIN 45 324)	MPO 4000mW (2000mW + 2000mW) on A.C. RMS 3200mW (1600mW + 1600mW) on D.C.
Semiconductors:	6-IC, 4-Transistor, 17-Diode, 2-LED (Light Emitting Diode)
Dimensions:	Width; 380mm (15") Depth; 94mm (3-3/4") Height; 194mm (7-3/4")
Weight:	2.7Kg (5.9 lbs) without batteries
Input terminals:	External microphone jacks (Left and Right)
Output terminals:	External speaker jacks (Left and Right) Headphones jack
Input/Output terminals:	Record/Playback socket (DIN)
Other terminals:	AC input socket

TAPE RECORDER SECTION

Type:	4-track stereo cassette tape recorder
Tape:	Philips type compact cassette tape
Tape speed:	4.8 cm/sec.
Frequency response:	50 ~ 10,000Hz
Recording system:	AC bias
Erasing system:	AC erasing
Wow and flutter:	0.3% (DIN 45 511)
Signal to noise ratio:	45dB

RADIO SECTION

Frequency range:	FM; 87.6 ~ 108MHz MW; 520 ~ 1,620kHz LW; 150 ~ 285kHz
Intermediate frequency:	FM; 10.7MHz MW/LW; 455kHz (GF-4545H) MW/LW; 465kHz (GF-4545E)

Specifications are subject to change without prior notice.

SHARP CORPORATION OSAKA, JAPAN

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

NAMES OF PARTS

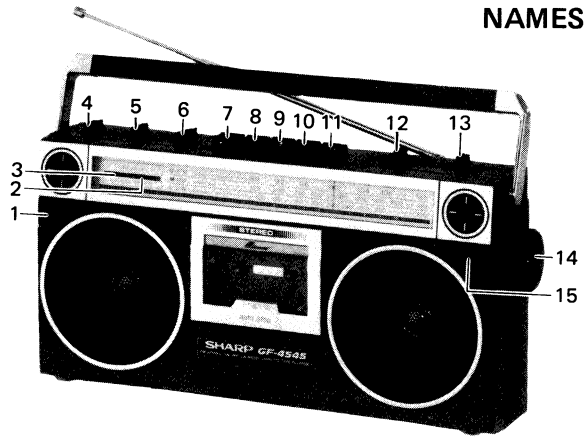


Figure 2–1

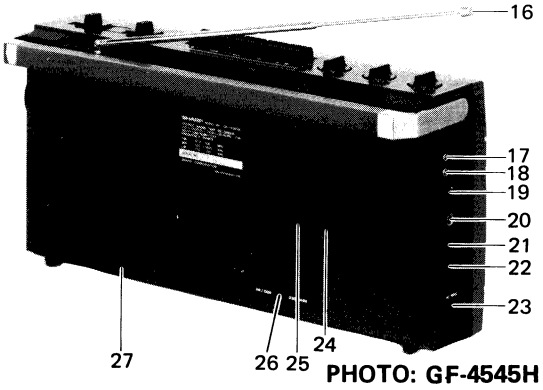


PHOTO: GF-4545H

Figure 2–2

1. Built-in microphone (Left channel)
2. FM stereo indicator
3. Recording/Battery condition indicator
4. Volume control
5. Tone control
6. Balance control
7. Stop/Eject button
8. Play button
9. Fast forward button
10. Rewind button
11. Record button
12. Function selector switch
13. Band selector switch
14. Tuning control
15. Build-in microphone (Right channel)
16. Telescopic rod antenna
17. External microphone jack (Left channel)
18. External microphone jack (Right channel)
19. Record/Playback (DIN) socket
20. Headphones jack
21. Monitor on/off switch
22. Beat cancel switch
23. AC input socket
24. External speaker jack (Left channel)
25. External speaker jack (Right channel)
26. Voltage selector switch (GF-4545H only)
27. Battery compartment lid

DISASSEMBLY (PHOTO: GF-4545H)

Note:
Prior to disassembly, never forget to remove the AC supply cord from a wall outlet.

A. FRONT CABINET REMOVAL (Refer to Figures 2-3 and 2-4)

1. Remove the battery compartment lid and take out six batteries.
2. Remove six screws Ⓐ retaining the back cabinet and lightly open the front cabinet.
3. Remove two sockets Ⓑ from the main P.W. Board.
4. Then the front cabinet can be removed.

B. MECHANISM BLOCK REMOVAL (Refer to Figure 2-4)

1. Unsolder the lead wires connected to the earth terminal (TP5) Ⓒ.
2. Remove four tips, two screws, the sockets and the nylon band Ⓓ.
3. Then the mechanism block can be removed.

C. MAIN P.W. BOARD REMOVAL (Refer to Figure 2-4)

1. Remove three control knobs and tuning knob Ⓔ.
2. Remove six screws and a tip Ⓕ.
3. Then the main P.W. Board can be removed.

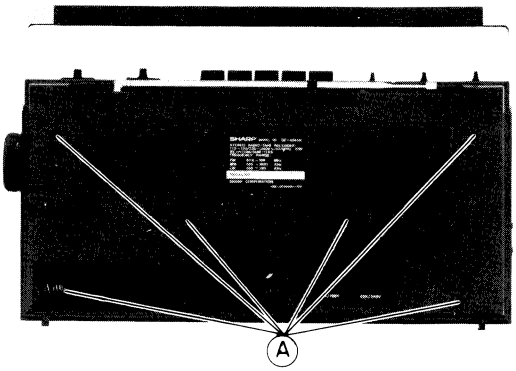


Figure 2–3

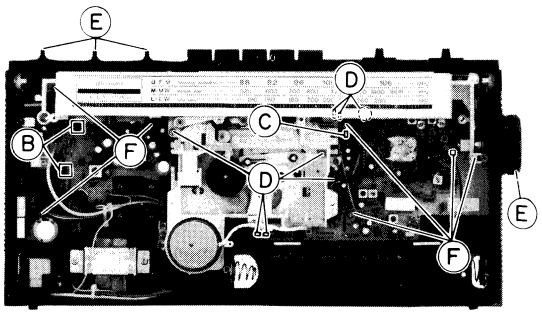


Figure 2–4

MECHANICAL ADJUSTMENT

■ FLYWHEEL THRUST CLEARANCE ADJUSTMENT

(Refer to Figure 3-1)

1. In adjusting and assembling, increase or decrease the number of thrust adjust washers so that the thrust gap is maintained at 0.1mm ~ 0.3mm.

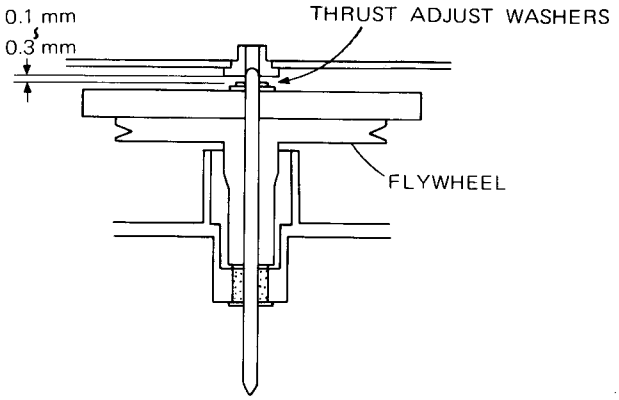


Figure 3–1

■ PINCH ROLLER PRESSURE ADJUSTMENT

(Refer to Figure 3-2)

1. Set the unit in play mode.
2. Push the point Ⓐ with a tension gauge (0 gr. to 1000 gr.) to make the pinch roller apart from the capstan. Then, check that the tension gauge will read 350 gr. to 550 gr. when the pinch roller stops to rotate.
3. As a result of the check in the step 2 above, if the reading is found outside the range of 350 gr. to 550 gr., adjust the spring of pinch roller by bending it or replace.

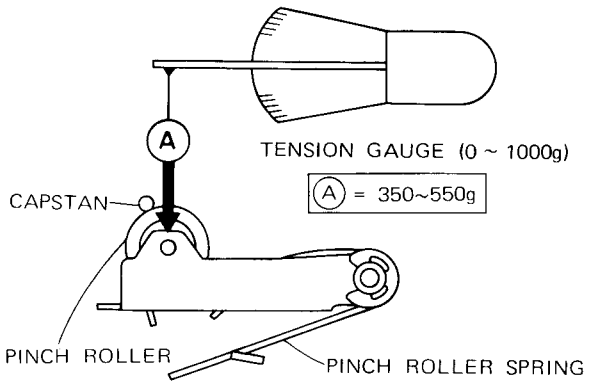
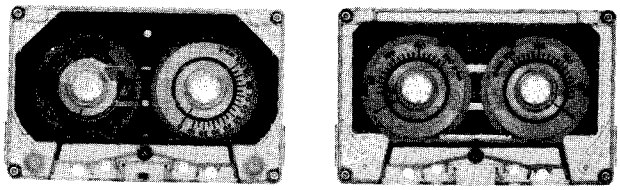


Figure 3–2

■ TORQUE CHECK AT PLAY, FAST FORWARD AND REWIND MODES

Put a torque meter cassette in the cassette compartment of the set, and see that the measured torque in each mode is normal as follows.

Mode	Torque meter cassette	Measured torque
Play back	TW-2111	30 ~ 70 gram•cm
Fast-forward	TW-2231	70 ~ 140 gram•cm
Rewind	TW-2231	70 ~ 140 gram•cm



TW-2111 **TW-2231**

Figure 3–3

■ AUTO STOP ADJUSTMENT (Refer to Figure 3-4)

1. Make sure that the auto stop mechanism acts rightly at the tape end.
2. If not, adjust the stroke by bending the end of auto stop lever.

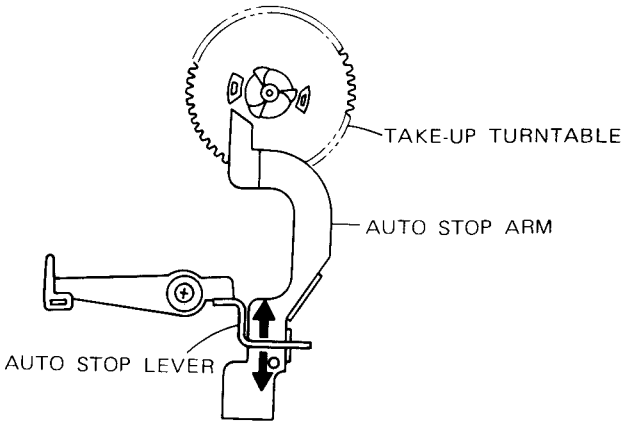


Figure 3–4

ELECTRICAL MEASUREMENT

* This unit operates on DC 9V. Check that the power supply is exactly 9V before measurement.
* Set the function selector switch (SW2) to "tape" position.

■ RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

(Refer to Figure 4-1)

1. Connect load resistors (4 ohm) to the external speaker jacks (J202, J302) and connect outputs of both right and left channels to the vertical and horizontal input terminals of oscilloscope.
2. Load the test tape (MTT-114, 10kHz, −10dB recorded).
3. Place the unit in play mode.
4. Adjust the head azimuth adjusting screw so that Lissajou's waveform attains the maximum and the same phase in right and left.

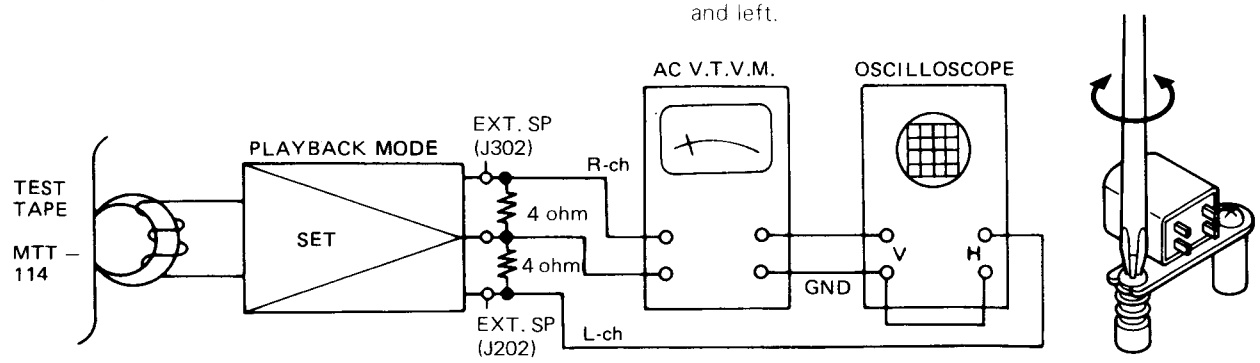


Figure 4–1

■ RECORD AMPLIFIER SENSITIVITY CHECK

(Refer to Figure 4-2)

1. Connect 4 ohm (2W, 5%) dummy load resistors to the external speaker jacks (J202, J302) and connect V.T.V.M. across the load.
2. Connect signal generator for 1kHz, −63dB (0dB = 1V) to the external microphone jacks (J201, J301).
3. Load the tape and place the unit in record mode.
4. If the record amplifier sensitivity is normal, the reading on the V.T.V.M. should be approximately 0.15V.

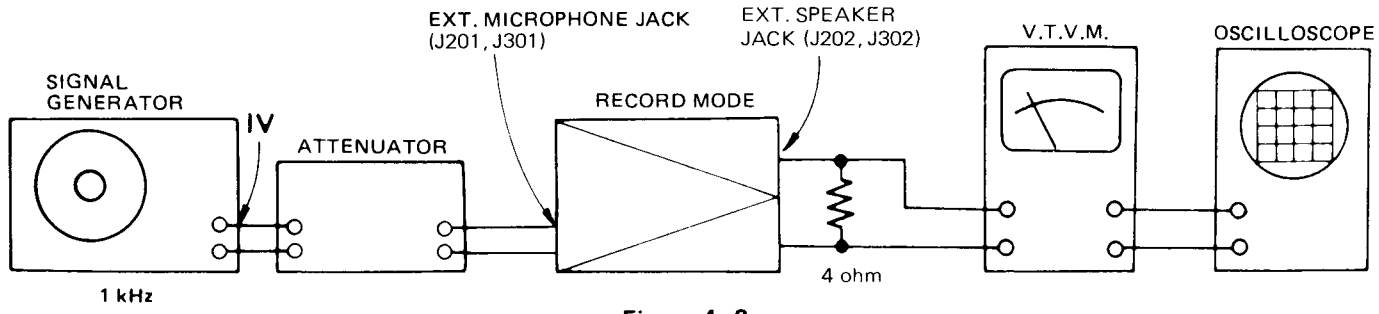


Figure 4–2

■ PLAYBACK AMPLIFIER SENSITIVITY CHECK

(Refer to Figure 4-3)

1. Connect 4 ohm (2W, 5%) dummy load resistors to the external speaker jacks (J202, J302) and connect V.T.V.M. across the load.
2. Load the test tape (MTT-112SP, 333Hz, −20dB recorded). and playback.
3. Place the unit in play mode with the volume control at maximum.
4. If the playback amplifier sensitivity is normal, the reading on the V.T.V.M. should be 0.45V ~ 0.7V.

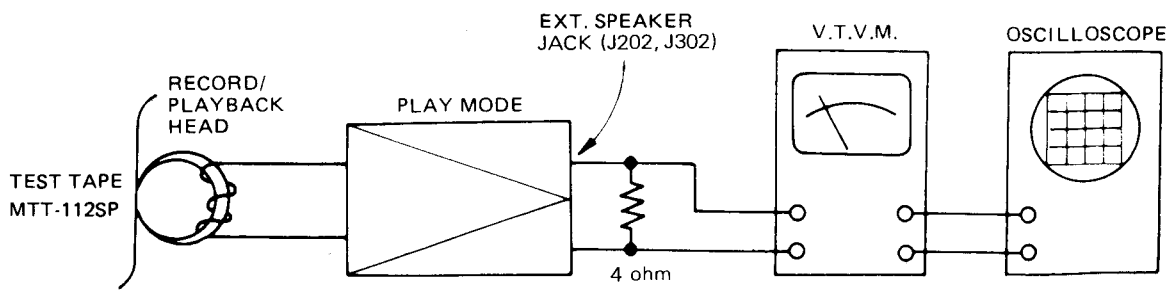


Figure 4–3

GENERAL ALIGNMENT INSTRUCTION

Should it become necessary at any time to check the alignment of this receiver, proceed as follows;

1. Set the volume control (VR3) to minimum.
2. Attenuate the signals from the generator enough to swing the most sensitive range of the output meter.
3. Use a non-metallic alignment tool.
4. Repeat adjustments to insure good results.

AM ALIGNMENT CHART

AM IF and MW RF ALIGNMENT

1. Set the function selector switch (SW2) to "radio" position. 2. Set the band selector switch (SW1) to "MW" position.

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL SETTING	METER CONNECTION	WHERE TO ADJUST	ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY				
1	IF	Connect AM sweep generator to the loop antenna and place it near the bar antenna (L5). (The output of signal generator should be as small as possible.)	GF-4545H 455kHz (400Hz, 30%, AM modulation) GF-4545E 465kHz (400Hz, 30%, AM modulation)	Highest frequency (to extreme right)	Connect an oscilloscope between the test point (TP6) and ground (TP5) through a capacitor (0.022 to 0.1 MFD.)	T5, T6	Rotate the core to adjust so that the waveform becomes maximum and symmetrical in right and left as shown in Fig. 5-1. Repeat this until adjustment be satisfied.
2	Frequency coverage	Connect AM signal generator to the loop antenna and place it about 60cm apart from the bar antenna (L5). (The output of signal generator should be as small as possible.)	510kHz (400Hz, 30%, AM modulation)	Lowest frequency (to extreme left)	Connect V.T.V.M. to the external speaker jack. (Set the volume control (VR3) to "max".)	Local oscillation coil L6	Adjust so as to make the output be maximum.
3		Same as step 2.	1650kHz, (400Hz, 30%, AM modulation)	Highest frequency (to extreme right)	Same as step 2.	Oscillation trimmer TC5	Same as step 2.
4	Tracking	Same as step 2.	600kHz, (400Hz, 30%, AM modulation)	600kHz	Same as step 2.	Antenna coil L5 (MW)	Same as step 2. (See Note A)
5		Same as step 2.	1400kHz, (400Hz, 30%, AM modulation)	1400kHz	Same as step 2.	Antenna trimmer TC3	Same as step 2. (See Note A)
6	Repeat the steps 2 and 3 or 4 and 5 until no further improvement can be made.						

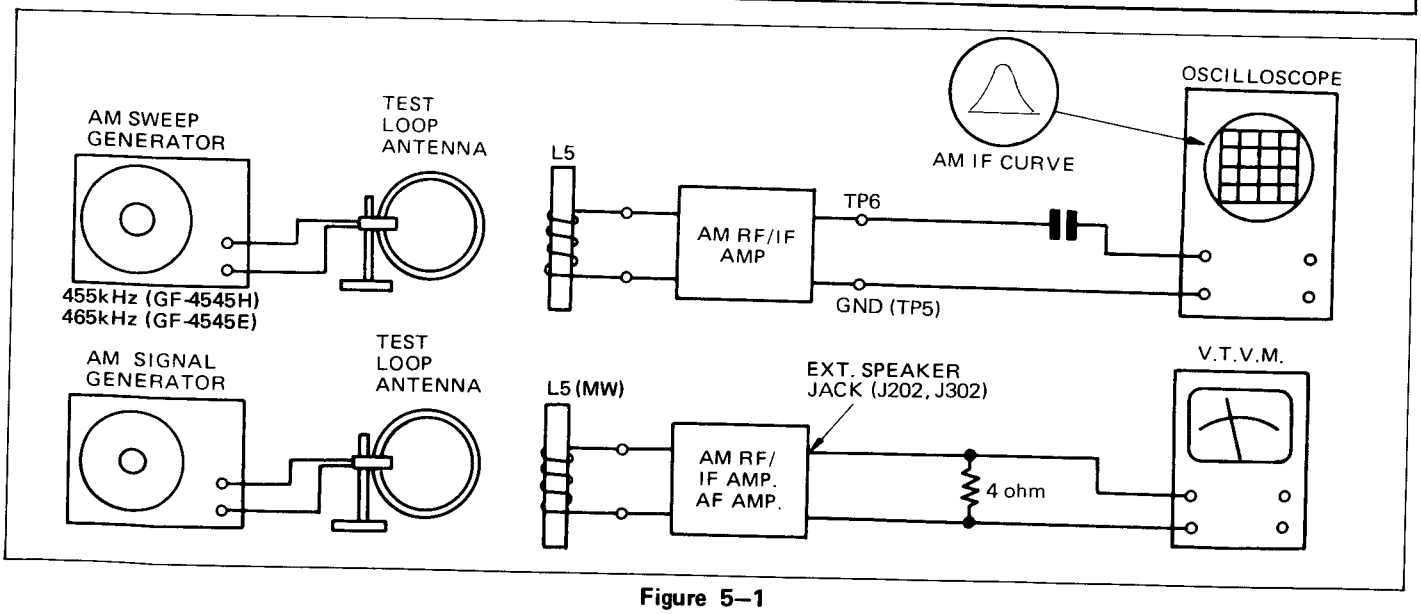


Figure 5–1

Note A Check the alignment of the receiver antenna coil by bringing a piece of ferrite (such as a coil slug) near the antenna loop stick, then a piece of brass. If ferrite increases output, loop requires more inductance. If brass increases output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance.

LW RF ALIGNMENT

1. Set the function selector switch (SW2) to "radio" position. 2. Set the band selector switch (SW1) to "LW" position.

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL SETTING	METER CONNECTION	WHERE TO ADJUST	ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY				
1	Frequency coverage	Connect AM signal generator to the loop antenna and place it about 60cm apart from the bar antenna (L5). (The output of signal generator should be as small as possible.)	145kHz (400Hz, 30%, AM modulation)	Lowest frequency (to extreme left)	Connect V.T.V.M. to the external speaker socket (Set the volume control (VR3) to "max".)	Local oscillation coil L7	Adjust so as to make the output be maximum.
2		Same as step 1.	295kHz, (400Hz, 30%, AM modulation)	Highest frequency (to extreme right)	Same as step 1.	Oscillation trimmer TC6	Same as step 1.
3	Tracking	Same as step 1.	160kHz, (400Hz, 30%, AM modulation)	160kHz	Same as step 1.	Antenna coil L5 (LW)	Same as step 1. (See Note A)
4		Same as step 1.	260kHz, (400Hz, 30%, AM modulation)	260kHz	Same as step 1.	Antenna trimmer TC4	Same as step 1. (See Note A)
5	Repeat the steps 1 and 2 or 3 and 4 until no further improvement can be made.						

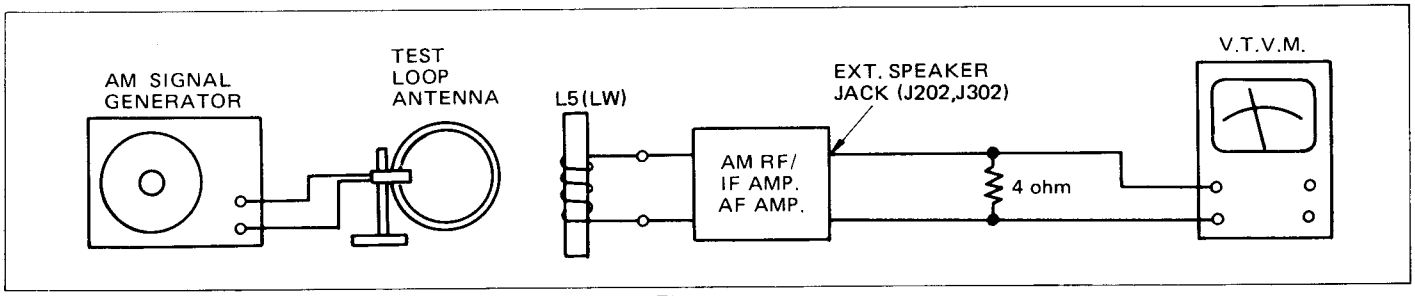


Figure 6–1

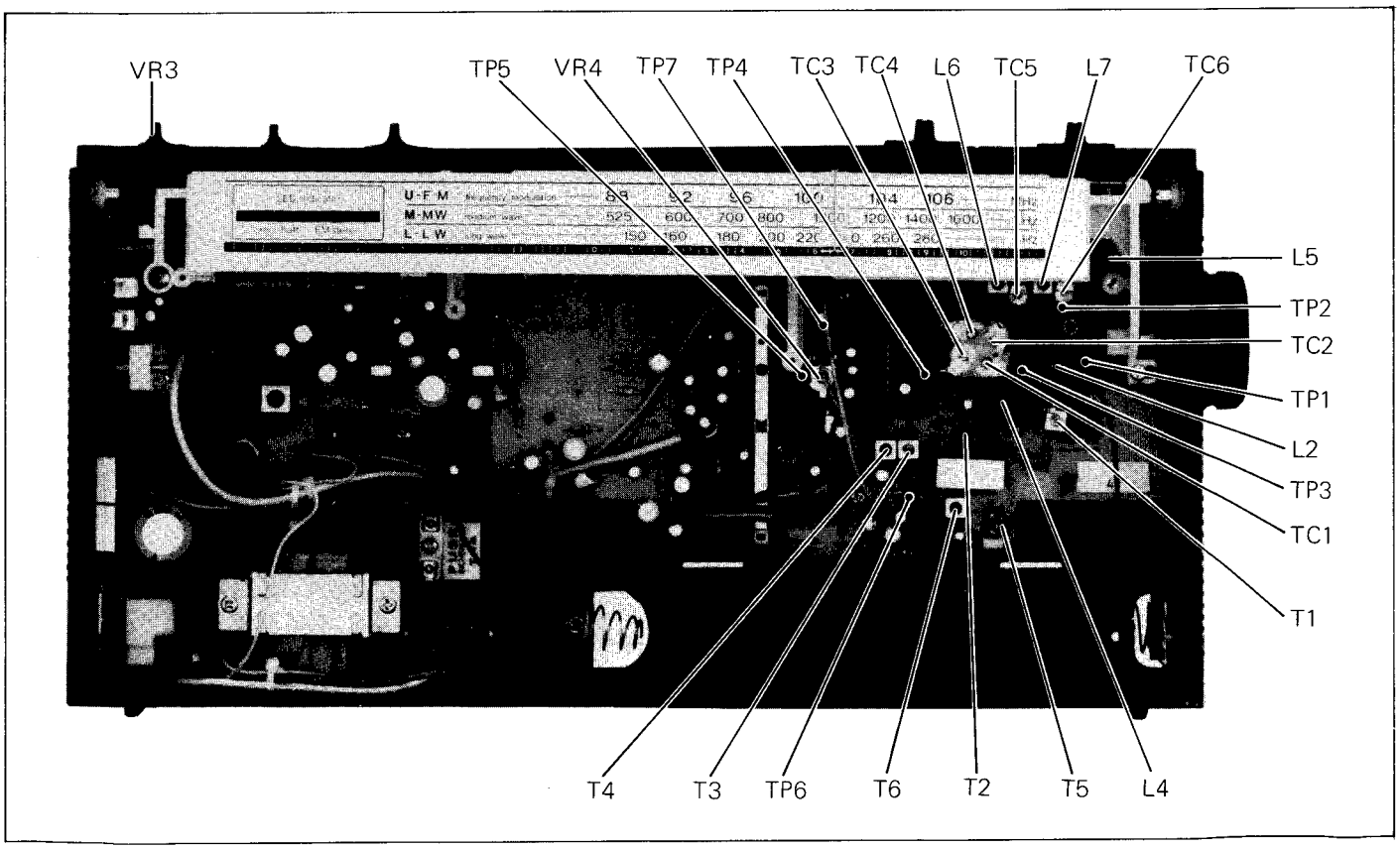


Figure 6–2 ALIGNMENT POINTS

FM ALIGNMENT CHART

1. Set the function selector switch (SW2) to "radio" position. 2. Set the band selector switch (SW1) to "FM" position.

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL SETTING	METER CONNECTION	WHERE TO ADJUST	ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY				
1	IF	Connect FM sweep generator to the TP3 through a capacitor (5pF). Connect its ground side to the chassis ground (TP2).	10.7MHz (400Hz, 100%, FM modulation)	Highest frequency (to extreme right.)	Connect an oscilloscope between the test point (TP4) and ground (TP5) through a capacitor (0.022 to 0.1 MFD.)	T1, T2, T3	Rotate the core to adjust so that the waveform becomes symmetrical in right and left as shown in Fig. 7-1 Ⓐ. (Rotate the core of T4 fully counter-clockwise.)
2	Detection	Same as step 1.	Same as step 1.	Same as step 1.	Same as step 1.	T4	Adjust the core so that the waveform ("s" curve) becomes symmetrical in up and down with the best linearity as shown in Fig. 7-1 Ⓑ.
3	Repeat the steps 1 and 2 until no further improvement can be made.						
4	Frequency coverage	Connect signal generator through a dummy, including output impedance of signal generator to the FM antenna (TP 1). (Refer to Figure 7-3) Ground lead of generator connected to the receiver chassis (TP2).	87.1MHz (400Hz, 30%, FM modulation)	Lowest frequency (to extreme left)	Connect V.T.V.M. to the external speaker jack. (Set the volume control (VR3) to "max".)	Local oscillation coil L4	Make the output be maximum.
5		Same as step 4.	109MHz (400Hz, 30%, FM modulation)	Highest frequency (to extreme right)	Same as step 4.	Oscillation trimmer TC1	Same as step 4.
6	Tracking	Same as step 4.	88MHz (400Hz, 30%, FM modulation)	88MHz	Same as step 4.	RF coil L2	Same as step 4.
7		Same as step 4.	108MHz (400Hz, 30%, FM modulation)	108MHz	Same as step 4.	RF trimmer TC2	Same as step 4.
8	Repat the steps 4 and 5 or 6 and 7 until no further improvement can be made.						

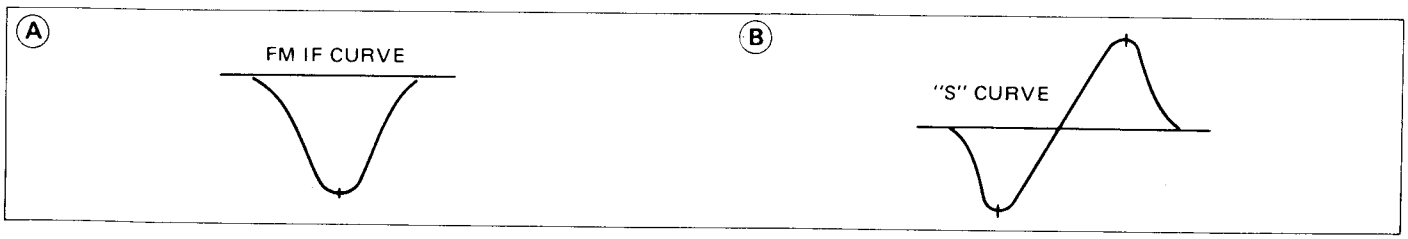


Figure 7–1

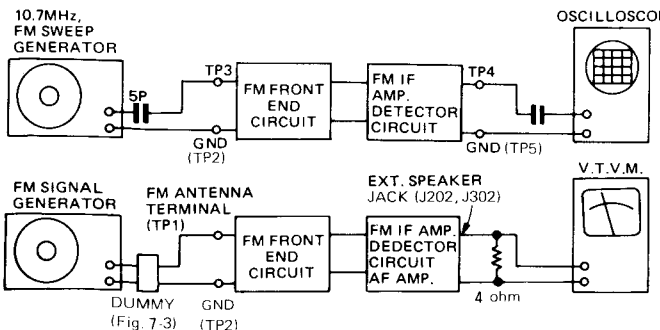


Figure 7–2

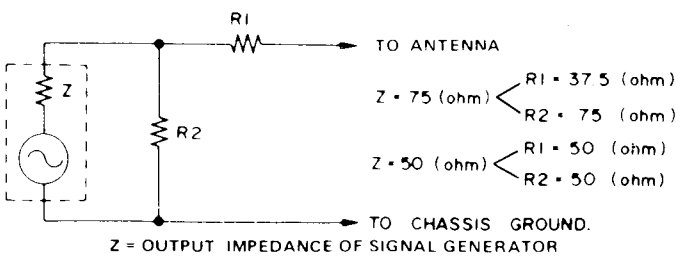
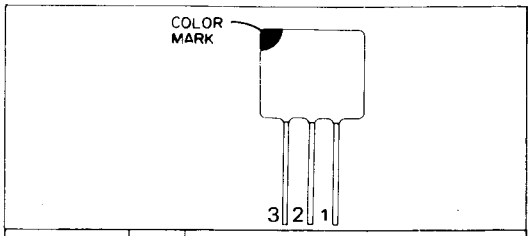


Figure 7–3

Note B (Refer to Figure 8-1)

There are 5 kinds of ceramic filter (CF1) available with this unit and they are given color indication as tabulated below to differentiate the central frequency from one to another among them.

When other ceramic filter than the one (red) having the central frequency of 10.7 MHz are used, note that a marker (10.7 MHz) of FM sweep generator, if used, will be deviated – therefore, adjust the generator by putting off the marker.



Central frequency (fo)	D	Black:	10.64 MHz ± 30 kHz
	B	Blue:	10.67 MHz ± 30 kHz
	A	Red:	10.70 MHz ± 30 kHz
	C	Orange:	10.73 MHz ± 30 kHz
	E	White:	10.76 MHz ± 30 kHz

Figure 8–1

FM MPX ALIGNMENT CHART

1. Set the function selector switch (SW2) to "radio" position.
2. Set the band selector switch (SW1) to "FM stereo "position.

STEP	SIGNAL GENERATOR		DIAL SETTING	METER CONNECTION	WHERE TO ADJUST	ADJUSTMENT
	CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY				
1	Connect FM stereo signal generator through a dummy, including output impedance of generator to the FM antenna (TP1). (Refer to Figure 7-3) Ground lead of generator connect to receiver chassis.(TP2)	Exactly 98 MHz (54dB) unmodulated	98 MHz	Connect frequency counter through a 100K ohm resistor to the TP7.	VR4	Adjust for 19 ±0.1kHz

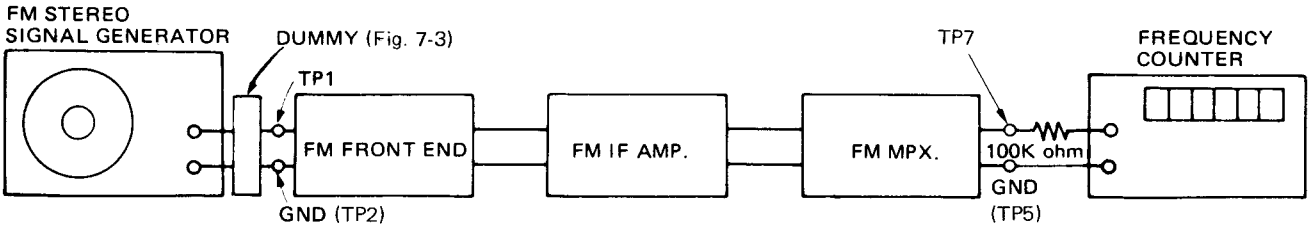
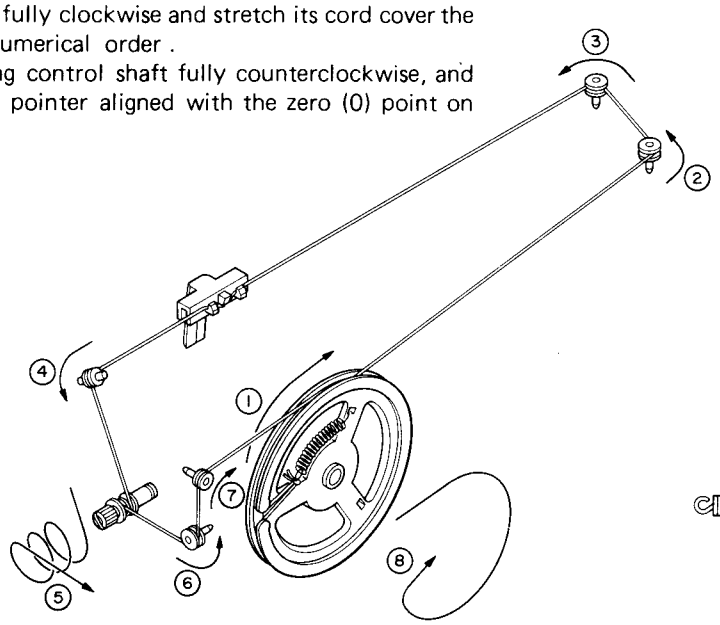
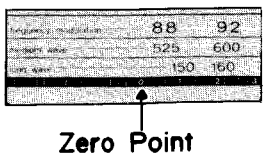


Figure 8–2

1) Turn the drum fully clockwise and stretch its cord cover the parts in the numerical order .
2) Turn the tuning control shaft fully counterclockwise, and fix it with the pointer aligned with the zero (0) point on the dial scale.





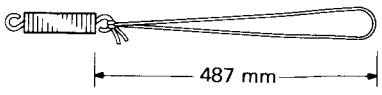


Figure 8–3 DIAL CORD STRINGING

VOLTAGE SELECTION (GF-4545H ONLY)

Take care to check the voltage setting of the voltage selector before connecting supply lead plug to the domestic AC outlet. If necessary adjust the setting as follows: Slide the voltage selector to the "110 ~ 120V" or "220 ~ 240V" position.

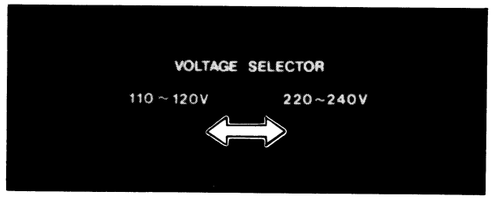


Figure 9–1

EQUIVALENT CIRCUIT OF IC

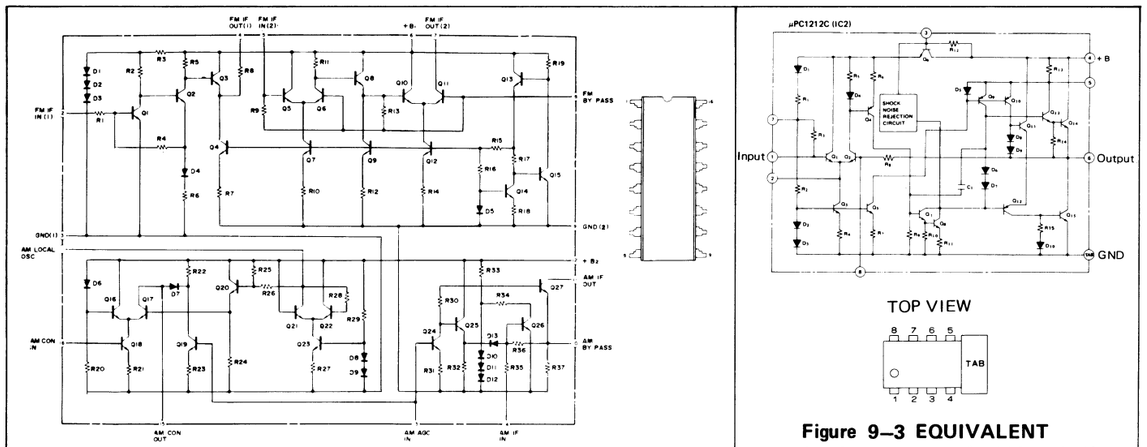


Figure 9–2 EQUIVALENT CIRCUIT OF IC (IC1)

Figure 9–3 EQUIVALENT CIRCUIT OF IC (IC202, IC302)

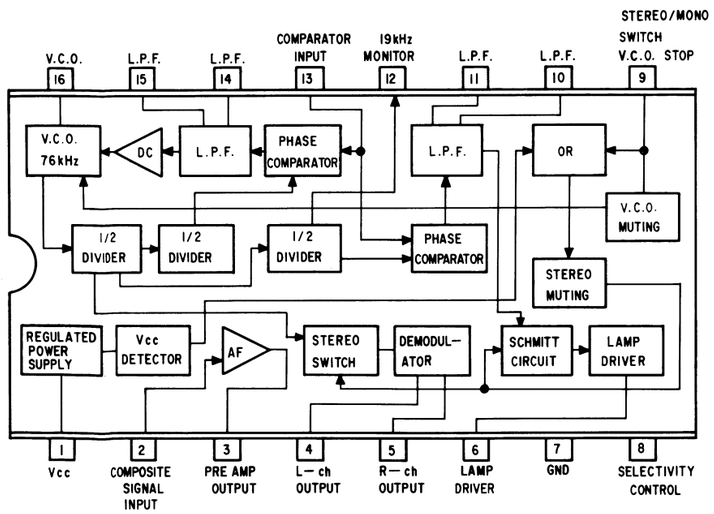


Figure 9–4 BLOCK DIAGRAM OF IC (IC2)

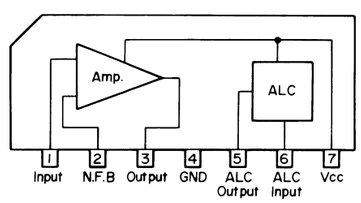


Figure 9–5 BLOCK DIAGRAM OF IC (IC201, IC301)

PACKING METHOD (GF-4545E ONLY)

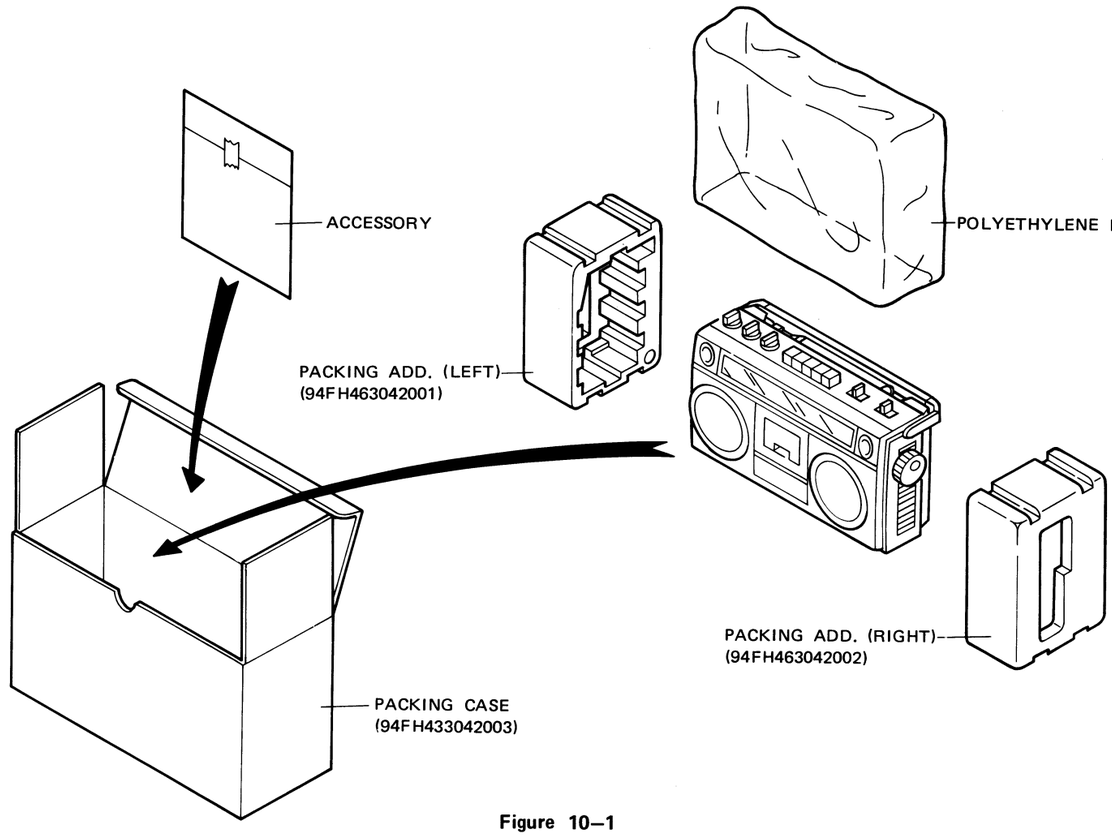


Figure 10–1

CAUTION (GF-4545E ONLY)

If any one of the nylon bands shown in the Figure 10–2 is once removed for some reason, be sure to reprise it to the original place in the same appearance as before.

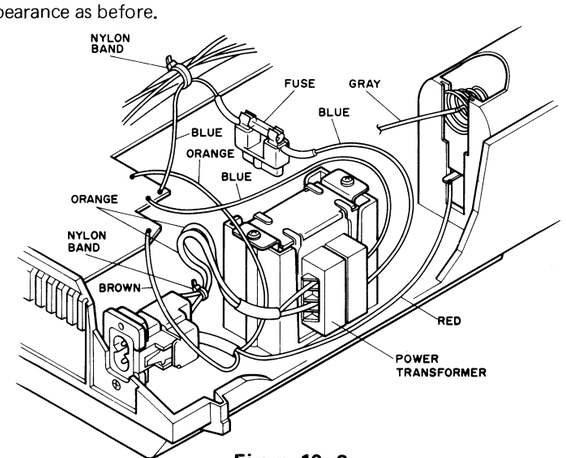
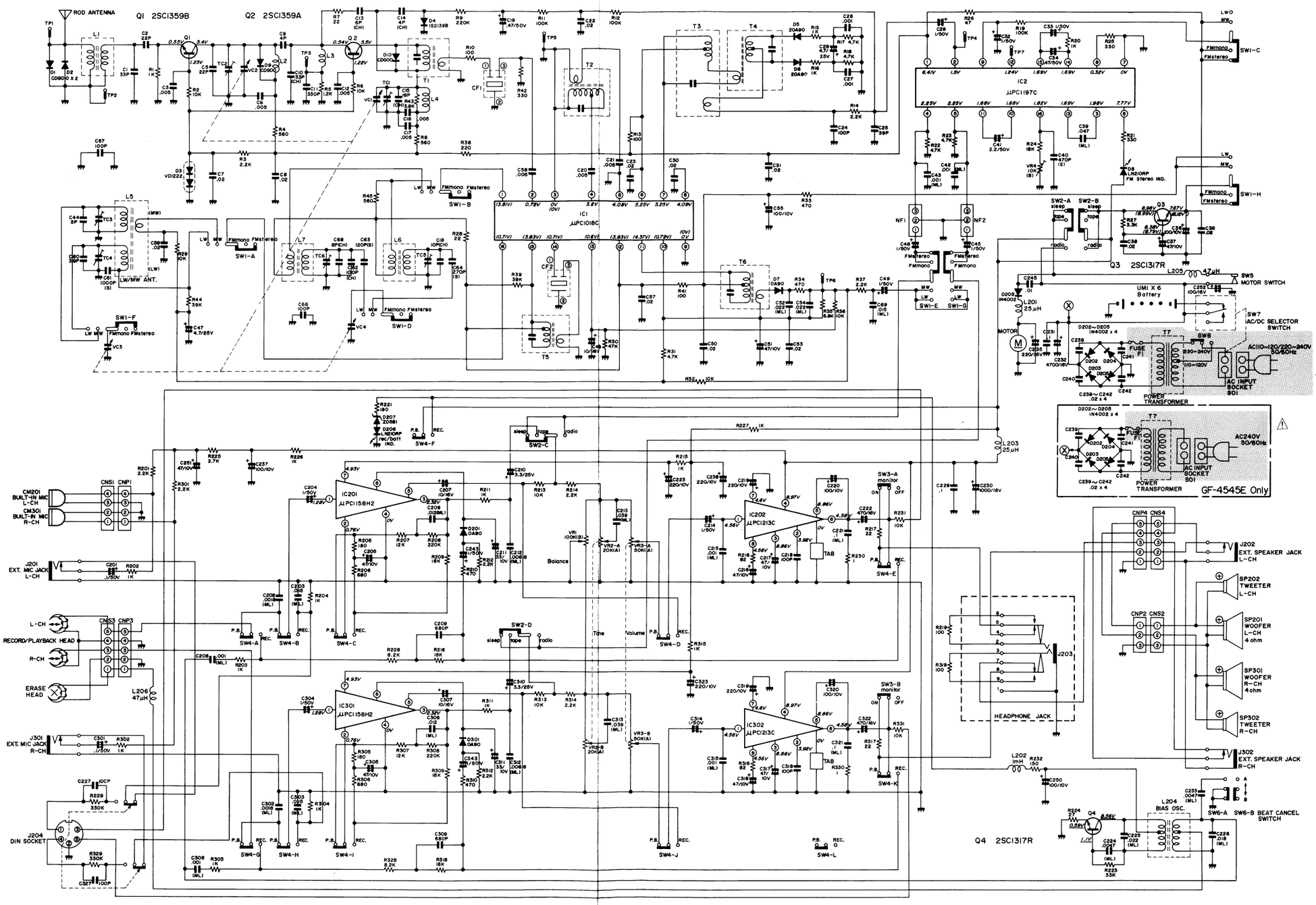


Figure 10–2



SW NO.	DESCRIPTION	POSITION
SW1 (A ~ H)	Band Selector	FM Stereo—FM Mono—MW—LW
SW2 (A ~ D)	Function Selector	sleep – tape – radio
SW3 (A , B)	Monitor	ON – OFF
SW4 (A ~ L)	Record/Playback	REC. – P.B.
SW5	Motor	ON – OFF

SW NO.	DESCRIPTION	POSITION
SW6 (A, B)	Beat Cancel	A – B
SW7	AC/DC Selector	AC – DC
SW8 (GF-4545H)	Voltage Selector	110~120 – 220~240

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

- The voltages are measured with VTVM under no signal input.
- Unless otherwise specified voltages are measured in FM mode.
  ( ) : MW or LW mode.
  ___ : Record mode.
- Unless otherwise specified all resistance in ohms. K = 1000 ohms.
- Unless otherwise specified all capacitance in microfarads. P = micro – microfarads.
- (ML) : Mylar film capacitor
- (CH) : Temperature compensating ceramic capacitor.

NOTES: Parts marked with "⚠" ( ) are important for maintaining the ssafety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Figur EMATIC DIAGRAM

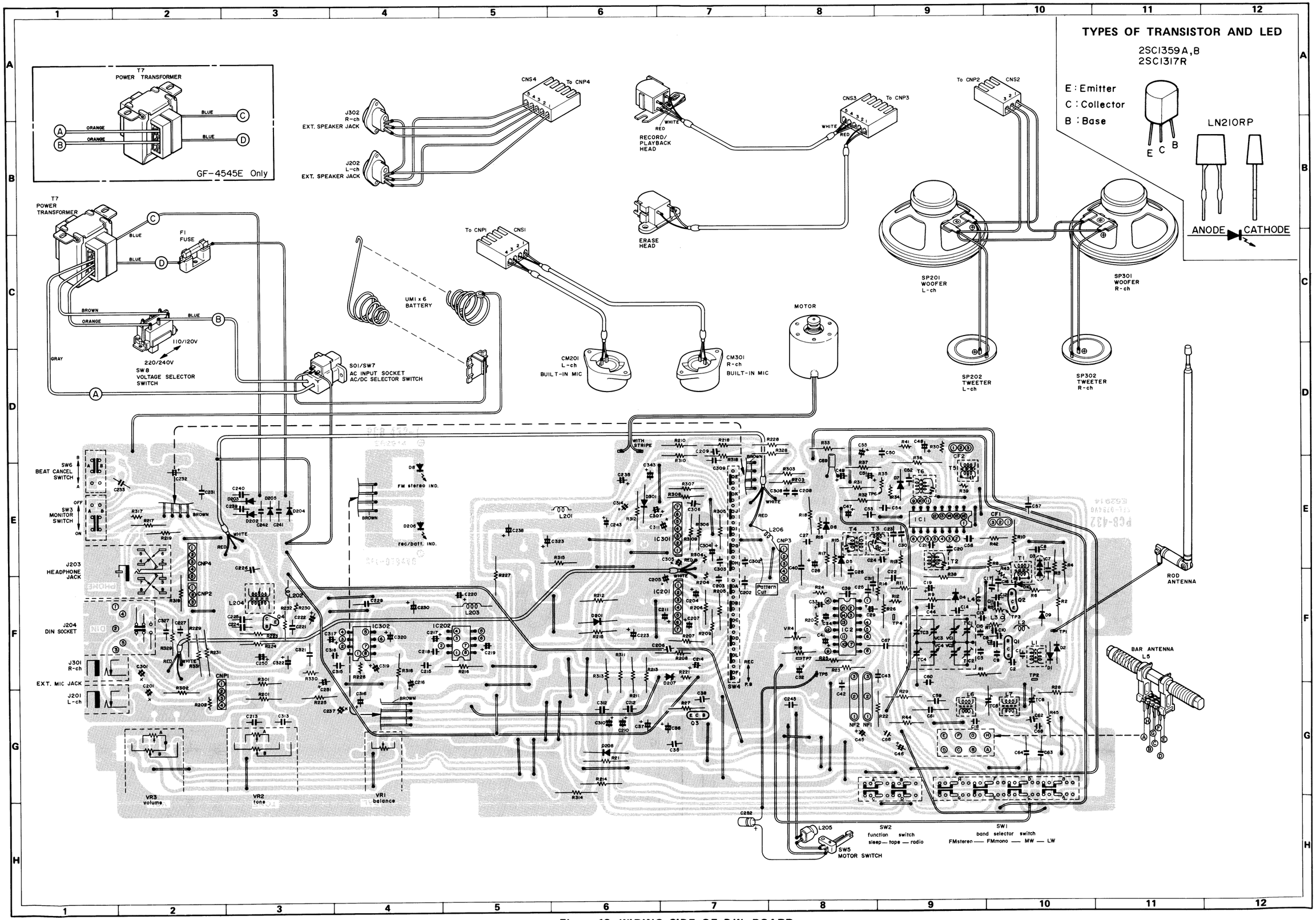


Figure 13 WIRING SIDE OF P.W. BOARD

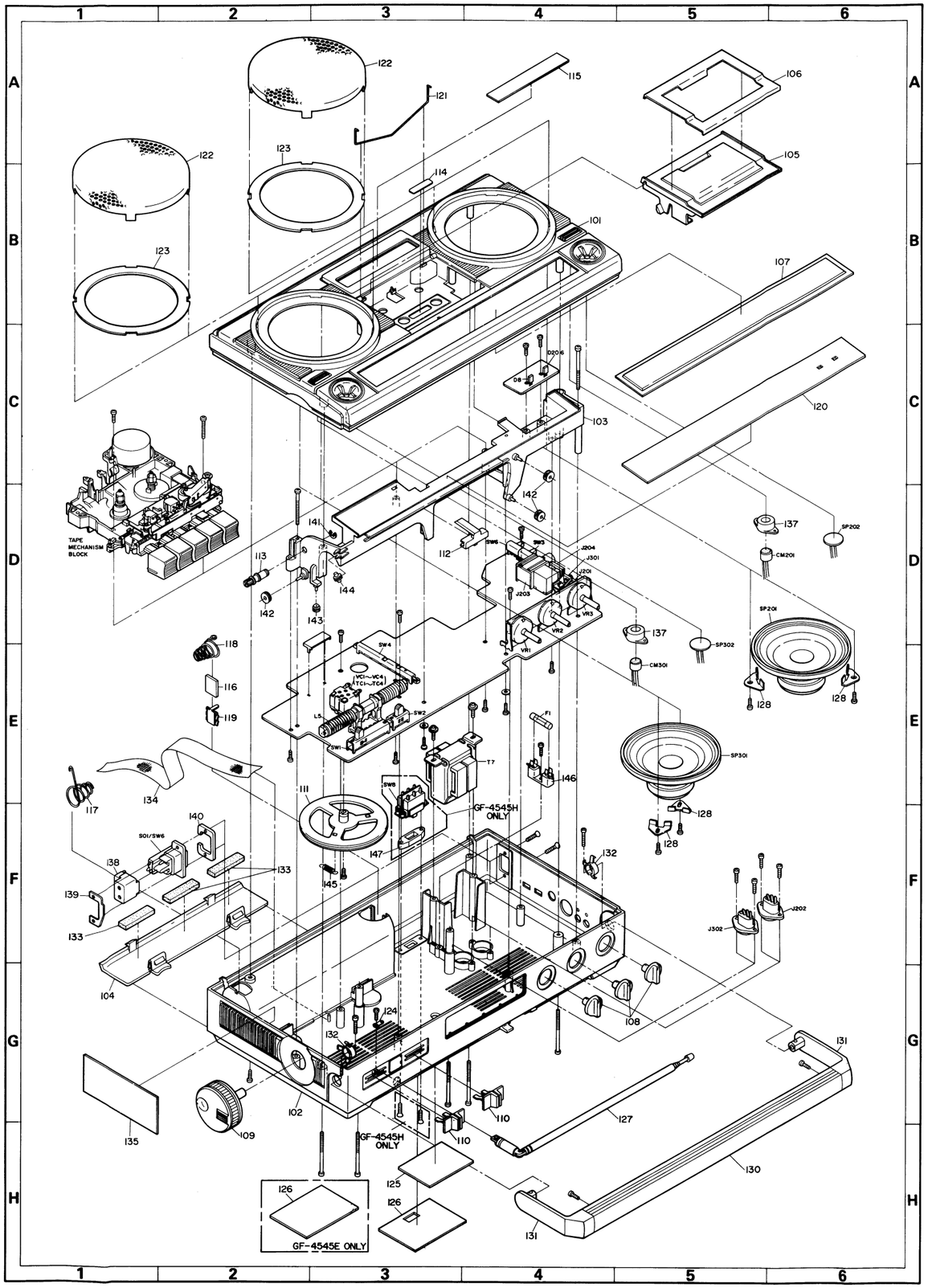


Figure 15 CABINET EXPLODED VIEW

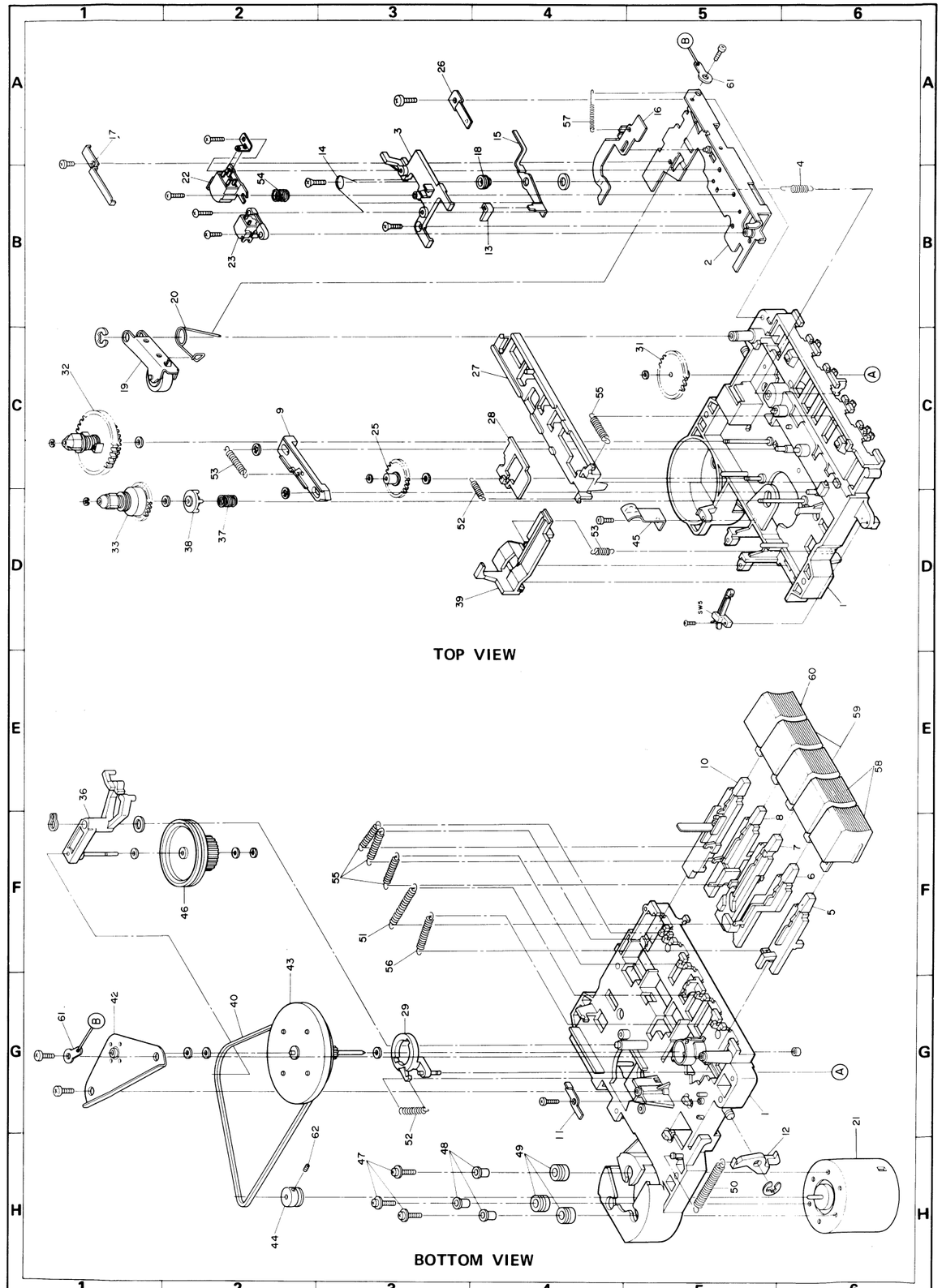


Figure 16 MECHANISM EXPLODED VIEW

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your oder filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION

NOTES:
Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO.	PART NO.	DESCRIPTION	CODE
	INTEGRATED CIRCUITS		
IC1	94FN56UPC1018C or RH-IX1086AFZZ	AM Mixer, AM/FM IF Amp. (μPC1018C)	AK
IC2	94FN56UPC1197C	FM Multiplex Demodulator (μPC1197C)	AW
IC201, 301	94FN56UPC1158H or VHIUPC1158H-1	Equalizer Amp. (μPC1158H2)	
IC202, 302	94FN56UPC1213C	Power Amp. (μPC1213C)	AV
	TRANSISTORS		
Q1	94FN572031359B or VS2SC1359B/-1	FM RF Amp. (2SC1359B)	AC
Q2	94FN572031359A	FM Converter (2SC1359A)	AE
Q3	94FN572031317R	Power Supply (2SC1317R)	AF
Q4	94FN572031317R	Bias Oscillator (2SC1317R)	AF
	DIODES		
D1, 2	94FN55CDG0000	Static Protector (CDG00)	AB
D3	94FN550VD1222	Voltage Regulator (VD1222)	AD
D4	94FN5501S2139B or VHC1S2139-B-1	Variable Capacitor, FM AFC (1S2139B)	AE
D5, 6	94FN5520A0090	FM Detector (20A90)	AD
D7	94FN5500A0090	AM Detector (0A90)	AD
D8	94FN820531002	LED, FM Stereo Indicator (LN210RP)	AL
D9, 10	94FN55CDG0000	FM Overload (CDG00)	AB
D201	94FN5500A0090	ALC Signal Detector (0A90)	AD
D202, 203, D204, 205	94FN5501N4002	Rectifier (1N4002)	AC
D206	94FN820531002	LED, Record/Battery Condition Indicator (LN210RP)	AL
D207	94FN550ZD05B1	Zener, Voltage Stabilizer (ZD5B1)	AE
D208	94FN5501N4002	Noise Suppression (IN4002)	AC
D301	94FN5500A0090	ALC Signal Detector (0A90)	AD
	COILS		
L1	94FN73THB0010	FM Antenna	AC
L2	94FN730400407	FM RF	AB
L3	94FN730000559	FM Emitter Choke	
L4	94FN730450307	FM Oscillator	AA
L5	94FN71MA108	MW/LW Bar Antenna	
L6	94FN80051HL07	MW Oscillator	
L7	94FN80052HL07	LW Oscillator	
L201	94FN740000250	Noise Choke, 25μH	AE
L202	94FN740000102	Noise Choke, 1mH	AE
L203	94FN740000250	Noise Choke, 25μH	AE
L204	94FN80006LF10	Bias Oscillator	
L205, 206	94FN73CHL47U	Noise choke, 47μH	AE
	TRANSFORMERS		
T1	94FN80071HF07	FM 1st. IF	AH
T2	94FN80052HF07	FM 2nd. IF	AH
T3	94FN80053HF07	FM Discriminator	AF
T4	94FN80044HF07	FM Discriminator	AG
T5	94FN80MF010	AM IF	AH
T6	94FN80026HG07	AM Detector	AF
⚠ T7	94FN80413PT48	Power (GF-4545E)	
	94FN80613PT48	Power (GF-4545H)	
	FILTERS		
CF1	94FN93072000F	FM IF	AL
CF2	94FN94465A000M	AM IF (GF-4545E)	
	94FN94455A000M	AM IF (GF-4545H)	
NF1, 2	94FN940500038	FM MPX, 38kHz Band Elimination	AH
	CONTROLS		
VC1, 2 VC3, 4 TC1, 2 TC3, 4	94FN68VC052	Variable Capacitor, Tuning with Trimmers TC1: FM Oscillator Trimmer TC2: FM RF Trimmer TC3: MW Antenna Trimmer TC4: LW Antenna Trimmer	
TC5	94FN660241016	Trimmer, MW Oscillator	
TC6	94FN660241016	Trimmer, LW Oscillator	
VR1, VR2 (A,B) VR3 (A,B)	94FN61RVR003	Variable Resistor with Bracket VR1: 100K ohm (B), Balance VR2: 20K ohm (A), Tone VR3: 50K ohm (A), Volume	BB
VR4	94FN61TRH010B	10K ohm (B), FM MPX Adjust	AE
	ELECTROLYTIC CAPACITORS		
(Unless otherwise specified electrolytic capacitors are 10V, +50—10% type.)			
C19	VCEALU1HW474M	.47MFD, 50V, ±20%	AB
C28	VCEAAU1EW475A	4.7MFD, 25V, +75 —10%	AB
C29, 32	VCEAAU1HW105A	1MFD, 50V, +75 —10%	AB
C33	VCEALU1HW105M	1MFD, 50V, ±20%	AB

REF. NO.	PART NO.	DESCRIPTION	CODE
C34	VCEALU1HW474M	.47MFD, 50V, ±20%	AB
C36	VCEAAU1AW107Y	100MFD	AB
C37	VCEAAU1AW476Y	47MFD	AB
C41	VCEALU1HW225M	2.2MFD, 50V, ±20%	AB
C45, 46	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C47	VCEAAU1EW475A	4.7MFD, 25V, +75 −10%	AB
C48	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	AB
C49	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C51	VCEAAU1AW476Y	47MFD	AB
C55	VCEAAU1AW107Y	100FMD	AB
C201	VCEAAU1HW104M	.1MFD, 50V, ±20%	AB
C204	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C205	VCEAAU1AW476Y	47MFD	AB
C207	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	AB
C210	VCEAAU1EW335A	3.3MFD, 25V, +75 −10%	
C211	VCEAAU1AW336Y	33MFD	AB
C214	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C216	VCEAAU1AW476Y	47MFD	AB
C217	VCEAAU1AW476Y	47MFD	AB
C219	VCEAAU1AW227Y	220MFD	AB
C220	VCEAAU1AW107Y	100MFD	AB
C222	VCEAAU1CW477Y	470MFD, 16V, +50 −10%	AC
C223	VCEAAU1AW227Y	220MFD	AB
C230	VCEAAU1CW108Y	1000MFD, 16V, +50 −10%	AD
C232	VCEAAU1CW478Y	4700MFD, 16V, +50 −10%	AH
C235	VCEAAU1CW227Y	220MFD, 16V, +50 −10%	
C237	VCEAAU1AW107Y	100MFD	AB
C238	VCEAAU1AW227Y	220MFD	AB
C243	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C250	VCEAAU1AW107Y	100MFD	AB
C251	VCEAAU1AW476Y	47MFD	AB
C252	VCEAAU1CW107Y	100MFD, 16V, +50 −10%	
C301	VCEAAU1HW104M	.1MFD, 50V, ±20%	AB
C304	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C305	VCEAAU1AW476Y	47MFD	AB
C307	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	AB
C310	VCEAAU1EW335A	3.3MFD, 25V, +75 −10%	
C311	VCEAAU1AW336Y	33MFD	AB
C314	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB
C316, 317	VCEAAU1AW476Y	47MFD	AB
C319	VCEAAU1AW227Y	220MFD	AB
C320	VCEAAU1AW107Y	100MFD	AB
C322	VCEAAU1CW477Y	470MFD, 16V, +50 −10%	AC
C323	VCEAAU1AW227Y	220MFD	AB
C343	VCEAAU1HW105A	1MFD, 50V, +75 −10%	AB

CAPACITORS

(Unless otherwise specified capacitors are 50V, ±20%, Mylar type.)

C1	VCCSPU1HL330J	33PF, 50V, ±5%, Ceramic	AA
C2	VCCSPU1HL220J	22PF, 50V, ±5%, Ceramic	AA
C3	VCKZPU1HB502M	.005MFD, 50V, ±20%, Ceramic	AA
C5	VCCSPU1HL220J	22PF, 50V, ±5%, Ceramic	AA
C6	VCKZPU1HB502M	.005MFD, 50V, ±20%, Ceramic	AA
C7, 8	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C9	VCCSPU1HL4R0C	4PF, 50V, ±0.25PF, Ceramic	
C10	VCCCPU1HH330J	33PF (CH), 50V, ±5%, Ceramic	
C11	VCCSPU1HL331J	330PF, 50V, ±5%, Ceramic	
C12	VCKZPU1HB502M	.005MFD, 50V, ±20%, Ceramic	AA
C13	VCCCPU1HH6R0C	6PF (CH), 50V, ±0.25PF, Ceramic	
C14	VCCCPU1HH4R0C	4PF (CH), 50V, ±0.25PF, Ceramic	
C15	VCCCPU1HH180J	18PF (CH), 50V, ±5% Ceramic	
C16, 17	VCKZPU1HB502M	.005MFD, 50V, ±20% Ceramic	AA
C18	VCCCPU1HH100J	10PF (CH), 50V, ±5%, Ceramic	
C20, 21	VCKZPU1HB502M	.005MFD, 50V, ±20%, Ceramic	
C22, 23	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C24	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	AA
C25	VCCSPU1HL390J	39PF, 50V, ±5%, Ceramic	AA
C26, 27	VCKZPU1HF102Z	.001MFD, 50V, +80 −20%, Ceramic	
C30, 31, C35, 38	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C39	VCQYKU1HM473M	.047MFD	
C40	VCQSMT1HS471J	470PF, 50V, ±5%, Styrol	
C42, 43	VCQYKU1HM102M	.001MFD	
C44	VCCSPU1HL5R0C	5PF, 50V, ±0.25PF Ceramic	
C50, 53, C57	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C52, 54	VCQYKU1HM223M	.022MFD	AB
C58	VCKZPU1HF502Z	.005MFD, 50V, +80 −20% Ceramic	
C59	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C60	VCCSPU1HL390J	39PF, 50V, ±5%, Ceramic	AA
C61	VCQSMT1HS102J	1000PF, 50V, ±5%, Styrol	
C62	VCCCPU1HH101J	100PF (CH), 50V, ±5%, Ceramic	
C63	VCQSMT1HS121J	120PF, 50V, ±5%, Styrol	
C64	VCQSMT1HS271J	270PF, 50V, ±5%, Styrol	
C66, 67	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	
C68	VCCCPU1HH8R0D	8PF (CH), 50V, ±0.5PF, Ceramic	
C69	VCQYKU1HM153M	.015MFD	AB
C202	VCQYKU1HM182M	.0018MFD	
C203	VCQYKU1HM153M	.015MFD	AB
C206	VCQYKU1HM123K	.012MFD, 50V, ±10%, Mylar	
C208	VCQYKU1HM102M	.001MFD	AA
C209	VCCSPU1HL681J	680PF, 50V, ±5%, Ceramic	
C212	VCQYKU1HM682M	.0068MFD	
C213	VCQYKU1HM393M	.039MFD	AB
C215	VCQYKU1HM102M	.001MFD	AA
C218	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	AA
C221	VCQYKU1HM104M	.1MFD	
C224	VCQYKU1HM472M	.0047MFD	AA
C225	VCQYKU1HM223M	.022MFD	AB
C226	VCQYKU1HM183M	.018MFD	
C227	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	AA
C229, 231	VCKZPU1HF104Z	.1MFD, 50V, +80 −20%, Ceramic	AB
C233	VCQYKU1HM472J	.0047MFD, 50V, ±5%, Mylar	
C239, 240, C241, 242	VCKZPU1HF203Z	.02MFD, 50V, +80 −20%, Ceramic	AA
C245	VCKZPU1HF104Z	.1MFD, 50V, +80 −20%, Ceramic	AB
C302	VCQYKU1HM182M	.0018MFD	
C303	VCQYKU1HM153M	.015MFD	AB
C306	VCQYKU1HM123K	.012MFD, 50V, ±10%, Mylar	
C308	VCQYKU1HM102M	.001MFD	AA
C309	VCCSPU1HL681J	680PF, 50V, ±5%, Ceramic	
C312	VCQYKU1HM682M	.0068MFD	
C313	VCQYKU1HM393M	.039MFD	AB
C315	VCQYKU1HM102M	.001MFD	AA
C318	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	AA
C321	VCQYKU1HM104M	.1MFD	
C327	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	AA

REF. NO.	PART NO.	DESCRIPTION	CODE

RESISTORS

(Unless otherwise specified resistors are 1/4W, ±5% Carbon type.)

R1	VRD-ST2EY102J	1K ohm	AA
R2	VRD-ST2EY103J	10K ohm	
R3	VRD-ST2EY222J	2.2K ohm	
R4	VRD-ST2EY561J	560 ohm	
R5	VRD-ST2EY122J	1.2K ohm	
R6	VRD-ST2EY103J	10K ohm	
R7	VRD-SU2EY220J	22 ohm	
R8	VRD-SU2EY561J	560 ohm	
R9	VRD-ST2EY224J	220K ohm	
R10	VRD-ST2EY101J	100 ohm	
R11	VRD-SU2EY104J	100K ohm	
R12	VRD-SU2EY104J	100K ohm	
R13	VRD-SU2EY101J	100 ohm	
R14	VRD-ST2EY222J	2.2K ohm	
R15	VRD-ST2EY102J	1K ohm	
R16	VRD-SU2EY102J	1K ohm	
R17, 18	VRD-ST2EY472J	4.7K ohm	
R19	VRD-ST2EY104J	100K ohm	
R20	VRD-SU2EY102J	1K ohm	
R21	VRD-ST2EY331J	330 ohm	
R22, 23	VRD-ST2EY472J	4.7K ohm	
R24	VRD-SU2EY183J	18K ohm	
R25	VRD-ST2EY331J	330 ohm	
R26	VRD-ST2EY470J	47 ohm	
R27	VRD-ST2EY332J	3.3K ohm	
R28	VRD-SU2EY220J	22 ohm	
R29	VRD-SU2EY103J	10K ohm	
R30	VRD-SU2EY473J	47K ohm	
R31	VRD-ST2EY472J	4.7K ohm	
R32	VRD-ST2EY103J	10K ohm	
R33	VRD-ST2EY471J	470 ohm	
R34	VRD-SU2EY471J	470 ohm	
R35	VRD-ST2EY682J	6.8K ohm	
R36	VRD-ST2EY103Y	10K ohm	
R37	VRD-ST2EY222J	2.2K ohm	
R38	VRD-ST2EY221J	220 ohm	
R39	VRD-SU2EY393J	39K ohm	
R41	VRD-SU2EY101J	100 ohm	
R42	VRD-SU2EY331J	330 ohm	
R43	VRD-SU2EY392J	3.9K ohm	
R44	VRD-SU2EY393J	39K ohm	
R45	VRD-ST2EY561J	560 ohm	
R201	VRD-ST2EY222J	2.2K ohm	
R202	VRD-SU2EY102J	1K ohm	
R203	VRD-ST2EY102J	1K ohm	
R204	VRD-SU2EY102J	1K ohm	
R205	VRD-ST2EY181J	180 ohm	
R206	VRD-ST2EY681J	680 ohm	
R207	VRD-ST2EY123J	12K ohm	
R208	VRD-ST2EY224J	220K ohm	
R209	VRD-ST2EY183J	18K ohm	
R210	VRD-ST2EY471J	470 ohm	
R211	VRD-ST2EY102J	1K ohm	
R212	VRD-ST2EY222J	2.2K ohm	
R213	VRD-ST2EY103J	10K ohm	
R214	VRD-ST2EY222J	2.2K ohm	
R215	VRD-ST2EY102J	1K ohm	
R216	VRD-ST2EY820J	82 ohm	
R217	VRD-ST2EY220J	22 ohm	
R218	VRD-ST2EY183J	18K ohm	
R219	VRD-ST2EY101J	100 ohm	
R221	VRD-SU2EY181J	180 ohm	
R223	VRD-ST2EY333J	33K ohm	
R224	VRD-ST2EY270J	27 ohm	
R225	VRD-ST2EY272J	2.7K ohm	
R226	VRD-SU2EY102J	1K ohm	
R227	VRD-ST2EY102J	1K ohm	
R228	VRD-ST2EY822J	8.2K ohm	AA
R229	VRD-ST2EY334J	330K ohm	
R230	VRD-SU2EY1R0J	1 ohm	
R231	VRD-ST2EY103J	10K ohm	
R232	VRD-ST2EY151J	150 ohm	
R301	VRD-ST2EY222J	2.2K ohm	
R302, 303	VRD-ST2EY102J	1K ohm	
R304	VRD-SU2EY102J	1K ohm	
R305	VRD-ST2EY181J	180 ohm	
R306	VRD-ST2EY681J	680 ohm	
R307	VRD-ST2EY123J	12K ohm	
R308	VRD-ST2EY224J	220K ohm	
R309	VRD-ST2EY183J	18K ohm	
R310	VRD-ST2EY471J	470 ohm	
R311	VRD-ST2EY102J	1K ohm	
R312	VRD-ST2EY222J	2.2K ohm	
R313	VRD-ST2EY103J	10K ohm	
R314	VRD-ST2EY222J	2.2K ohm	
R315	VRD-ST2EY102J	1K ohm	
R316	VRD-ST2EY820J	82 ohm	
R317	VRD-SU2EY220J	22 ohm	
R318	VRD-ST2EY183J	18K ohm	
R319	VRD-ST2EY101J	100 ohm	
R328	VRD-ST2EY822J	8.2K ohm	
R329	VRD-ST2EY334J	330K ohm	
R330	VRD-SU2EY1R0J	1 ohm	
R331	VRD-ST2EY103J	10K ohm	

MECHANICAL PARTS

1	94FH15905F1013	Main Chassis Assembly	
2	94FH15905B1019	Sub Chassis Assembly	
3	94FH109051005f	Holder, Record/Playback Head	AD
4	94FS189051055a	Spring, Sub Chassis	AD
5	94FH15905F1005	Lever, Eject/Stop	
6	94FH15905F1006	Lever, Playback	
7	94FH15905F1007	Lever, Fast-Forward	
8	94FH15905F1008	Lever, Rewind	AE
9	94FH15905F1002	Lever, Record Safety	AG
10	94FH15905F1010	Record Lever Assembly	AB
11	94FH159051013	Lever, Cassette Holder Lock Release	AG
12	94FH15905B1027	Lever, Cassette Holder Lock	AD
13	94FH159051015	Contact, Tape	AB
14	94FS189051016b	Spring, Auto Stop Lever	AB
15	94FH159051067b	Lever, Auto Stop	AD
16	94FH159051018a	Arm, Auto Stop	AD
17	94FH159051019	Bracket, Auto Stop Arm	AD
18	94FH27905A1014	Shaft, Auto Stop Lever	AB
19	94FH179051020	Pinch Roller Assembly	AM
20	94FS18905A1007	Spring, Pinch Roller	AB
21	94FN910940924	Motor	BE
22	94FN79RH040	Head, Record/Playback	BB
23	94FN790262000	Head, Erase	AU
25	94FH179051028	Gear, Fast-Forward Idler	AC
26	94FH10905A1010	Bracket, Sub Chassis	
27	94FH15905A1004	Lever, Function Lever Lock	
28	94FH15905A1005	Plate, Record Lever Lock	
29	94FH15905F1014	Take-up Idler Assembly	AC
31	94FH179051033a	Gear, Take-up Idler	AF
32	94FH159051024	Take-up Turntable Assembly	AN
33	94FH15905F1012	Supply Turntable Assembly	
36	94FH15905F1015	Fast-Forward/Rewind Drive Arm Assembly	AD
37	94FH180823114	Spring, Back Tension	
38	94FH15905F1004	Stopper, Back Tension	AC
39	94FH159051043C	Lever, Anti Record (Erase Proof)	AD

REF. NO.	PART NO.	DESCRIPTION	CODE
40	94FH319051001	Belt, Drive	AK
42	94FH15905B1031	Flywheel Bracket Assembly	AE
43	94FH179051049a	Flywheel Assembly	AW
44	94FH17905F1011	Pulley, Motor	AE
45	94FH15905C1019	Plate, Cassette Retaining	AE
46	94FH17905B1013	Fast-Forward/Rewind Drive Assembly	AN
47	94FS011042609	Screw, Motor	AA
48	94FH279051060a	Spacer, Motor Retaining	AB
49	94FS059051061	Cushion Rubber, Motor	AB
50	94FS180713070	Spring, Cassette Lock Lever	AC
51	94FS180713072	Spring, Play Lever	AB
52	94FS180713049	Spring, Record Lever Lock Plate/Take-up Idler Arm	AB
53	94FS180713033	Spring, Record Safety Lever/Anti Record	AB
54	94FS180823149	Spring, Head Azimuth	AB
55	94FS180713113	Spring, Fast-Forward/Rewind/Record/Function Lever Lock Lever	AE
56	94FS180713054	Spring, Eject/Stop Lever	AB
57	94FS189051078a	Spring, Auto Stop Arm	AC
58	94FH1130400081	Button, Eject/Stop, Playback, Rewind	AF
59	94FH113040030	Button, Fast-Forward	AE
60	94FH1130400082	Button, Record	
61	94FN100300000	Lug, Ground	
62	94FS011062003	Screw, Motor Pulley Retaining	

MISCELLANEOUS

101	94FH0130400021	Cabinet, Front	BF
102	94FH0230400012	Cabinet, Back	
103	94FH153040003	Chassis, Radio	
104	94FH043040004	Lid, Battery Compartment	
105	94FH053040005	Holder, Cassette	AT
106	94FH8830400062	Overlay, Cassette Holder	
107	94FH213040007	Window, Dial Scale	AS
108	94FH113040009	Knob, Volume/Tone/ Balance	AD
109	94FH111040017	Knob, Tuning	
110	94FH113040011	Knob, Slide Switch	AD
111	94FH173040012	Drum, Dial Cord Stringing	AG
112	94FH323040013	Dial, Pointer	AF
113	94FH383040014	Tuning Shaft	AB
114	94FH153040015	Mirror, Cassette Compartment	AC
115	94FH8130400162	Badge, Model Name	
116	94FH503040017	Sheet, Shield	AC
117	94FS183040018	Spring, Battery (+) (—)	AD
118	94FS183040019	Spring, Battery (—)	AC
119	94FH153040020	Battery Terminal	AE
120	94FH8330400212	Dial Scale	
121	94FS183040022	Spring, Cassette Compartment	AD
122	94FH8030400101	Punching Metal, Speaker (Woofer)	AS
123	94FH093040024	Spacer, Speaker (Woofer)	AD
124	94FH153040025	Ground Plate (FM)	
125	94FH824545H700	Plate, Specification (GF-4545H)	
	94FH824545E705	Plate, Specification (GF-4545E)	
126	94FH823040028	Plate, Caution (GF-4545H)	
	94FH824545E710	Plate, Caution (GF-4545E)	

REF. NO.	PART NO.	DESCRIPTION	CODE
127	94FN69RA020	Telescopic Rod Antenna	AY
128	94FH102021030d	Bracket, Speaker (Woofer)	AC
130	94FH373040031	Handle Grip	AQ
131	94FH371040012c	Bracket, Handle	AQ
132	94FH371040014	Bushing, Handle	AD
133	94FS053040029	Cushion, Battery	AA
134	94FS053040033	Ribbon, Battery	
135	94FH503040023	Felt, Back Cabinet (Side)	
137	94FH052030017	Bracket, Built-in Microphone	AC
⚠ 138	94FH045070013h	Cover, AC Input Socket	AD
139	94FH102040037b	Holder, AC Input Socket	AB
140	94FH09C2040038	Spacer, AC Input Socket	AC
141	94FS031040000	Stopper, Tuning Shaft	AA
142	94FH17C2031004	Pulley, Dial Cord Stringing	AB
143	94FH172120026a	Pulley, Dial Cord Stringing	
144	94FH179070017	Pulley, Dial Cord Stringing	
145	94FS180713055	Spring, Dial Cord Stringing	AC
⚠146	94FN85001VS+0	Holder, Fuse	
147	94FH093040034	Spacer, Voltage Selector Switch (GF-4545H)	
CM201, 301	94FN780363000	Built-in Microphone	
J201, 301	94FN8702201350	Jack, External Microphone	
J202, 302	94FN87101500D	Jack, External Speaker	
J203	94FN87JAK064	Jack, Headphones	AV
J204	94FN87JAK076	Socket, Record/Playback (DIN)	
⚠ SO1/SW7	94FN86008V000	Socket, AC Input with AC/DC Selector Switch (SW7)	
SP201, 301	94FN784041004	Woofer, 4 ohm	
SP202, 302	94FTBB206A6	Tweeter	
SW1 (A~H)	94FN778411084	Switch, Band Selector	
SW2 (A~D)	94FN770471043	Switch, Function Selector	AQ
SW3 (A, B)	94FN77101A1022	Switch, Monitor on/off	AH
SW4 (A~L)	94FN77SLS021	Switch, Record/Playback	AS
SW5	94FN77LFS202	Switch, Motor	AN
SW6 (A, B)	94FN77101A1022	Switch, Beat Cancel	
⚠ SW8	94FN77SLS223	Switch, Voltage Selector (GF-4545H)	
⚠ F1	94FN840001000	Fuse, T1A	
⚠	94FN89011B000	AC Supply Cord (GF-4545E)	
⚠	94FN89023VS+0	AC Supply Cord (GF-4545H)	
CNP1	94FN10TM604	Plug, 4-pin	AF
CNP2	94FN10TM603	Plug, 3-pin	AF
CNP3	94FN10TM605	Plug, 5-pin	AG
CNP4	94FN10TM605	Plug, 5-pin	AG
CNS1	94FN97CW604	Socket, 4-pin (Tip and Lead)	AQ
CNS2	94FN97CW603	Socket, 3-pin (Tip and Lead)	AH
CNS3	94FN97CW605	Socket, 5-pin (Tip and Lead)	AP
CNS4	94FN97CW705	Socket, 5-pin (Tip and Lead)	AL
	94FW520040260	4-core Wire, 260mm	AH
	94FW520040100	4-core Wire, 100mm	AE
	94FH463042001	Packing Add. (Left)	
	94FH463042002	Packing Add. (Right)	
	94FH433042003	Packing Case	AY
	94FH41-GF4545H	Operation Manual (GF-4545H)	
	94FH41-GF4545E	Operation Manual (GF-4545E)	

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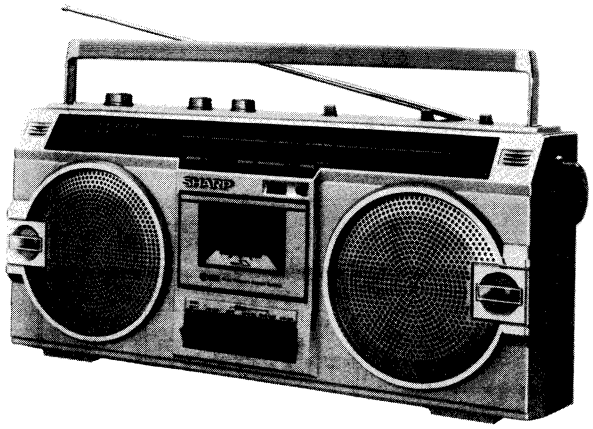
SHARP

GF-5454H
GF-5454E

SERVICE MANUAL/SERVICE-ANLEITUNG/MANUEL DE SERVICE

APSS
Auto Program Search System

ATSM582070RCS



GF-5454H
GF-5454E
(SRC products)

Note for users in UK:
Recording and playback of any material may require consent which SHARP are unable to give. Please refer particularly to the provisions of Copyright Act 1956, the Dramatic and Musical Performers Protection Act 1958, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.
- Im Interesse der Benutzer-Sicherheit sollte dieses Gerät wieder auf seinen ursprünglichen Zustand eingestellt und nur die vorgeschriebenen Teile verwendet werden.
- Dans l'intérêt de la sécurité de l'utilisateur, l'appareil devra être reconstitué dans sa condition première et seules des pièces identiques à celles spécifiées, doivent être utilisées.

(GB)

By the Specification Label at the back of units, it is possible to distinguish Japanese products from SRC's ones.
In case that the Label has an indication of "MADE IN JAPAN", see the service manual GF-5454H/E (ATSM282030RCS) last published; while if it has no indication, see this one because a portion of parts at the tuner is changed.

(D)

Durch den Spezifikationsaufkleber an der Rückseite des Gerätes ist es möglich, die japanischen Produkte von SRCs unterscheiden.
Wenn das Anzeichen "MADE IN JAPAN" im Aufkleber angezeigt wird, sehen Sie die vor kurzem herausgegebene Service-Anleitung GF-5454H/E (ATSM282030RCS), wenn er keine Angabe hat, sehen Sie diese Service-Anleitung, weil einige Teile des Tuners gewechselt werden.

(F)

Il est possible de distinguer les produits japonais de ceux de SRC par l'étiquette des caractéristiques qui se trouve à l'arrière des appareils.
Au cas où l'étiquette porte une indication "MADE IN JAPAN", voir le manuel de service GF-5454H/E (ATSM282030RCS), le premier publié; alors que si elle ne possède pas d'indication, voir le présent manuel de service parce que quelques pièces du tuner sont modifiées.

SHARP CORPORATION OSAKA, JAPAN

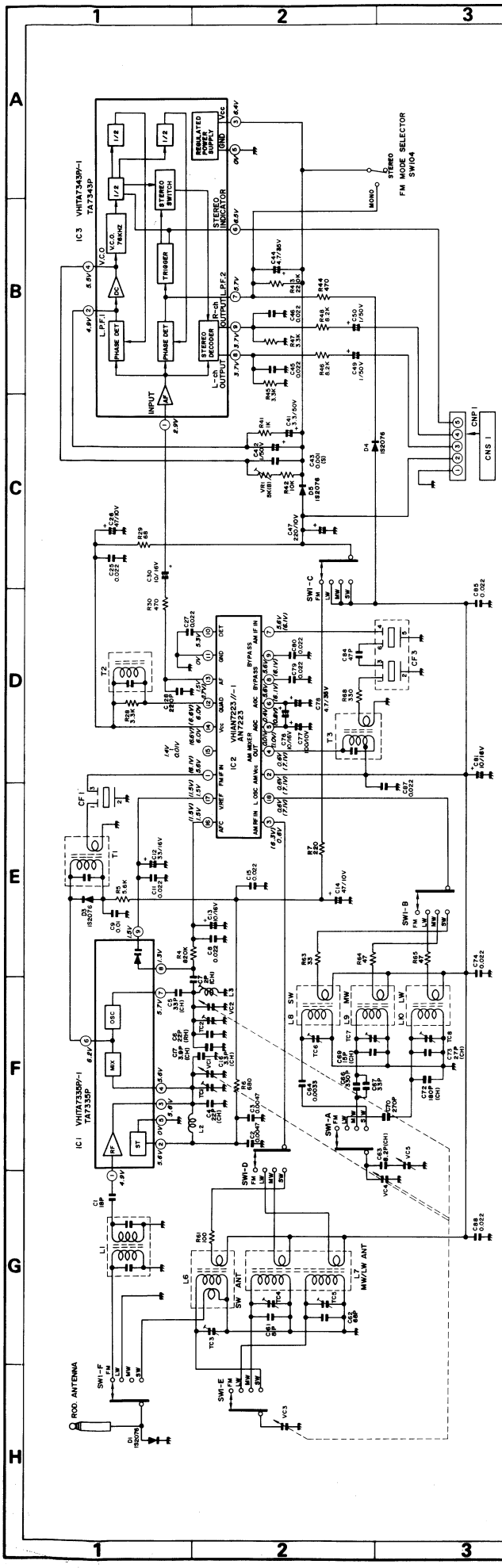


Figure 2–1 SCHEMATIC DIAGRAM

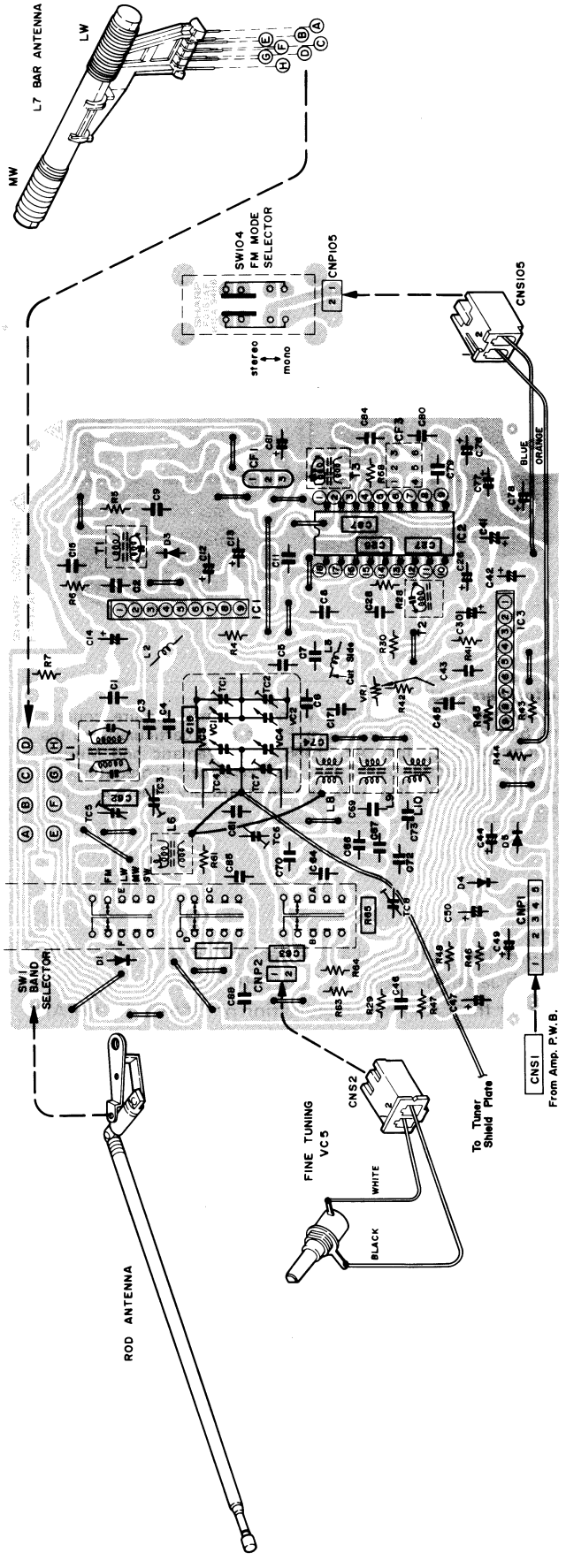


Figure 2–2 WIRING SIDE OF P.W. BOARD

(GB) REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

(D) ERSATZTEILLISTE

"BESTELLEN VON ERSATZTEILEN"

Um Ihren Auftrag schnell und richtig ausführen zu können, bitten wir um die folgenden Angaben.

1. MODELLNUMMER
2. REF.-NR
3. TEIL-NR
4. BESCHREIBUNG

Die mit ⚠ bezeichneten Teile sind besonders wichtig für die Aufrechterhaltung der Sicherheit. Beim Wechseln dieser Teile sollten die vorgeschriebenen Teile immer verwendet werden, um sowohl die Sicherheit als auch die Leistung des Gerätes aufrechtzuerhalten.

(F) LISTE DES PIECES DE RECHANGE

"COMMENT COMMANDER DES PIECES DE RECHANGE"

Pour voir votre commande exécutée de manière rapide et correcte, veuillez les renseignements suivants.

1. NUMERO DU MODELE
2. Nº DE REFERENCE
3. Nº DE LA PIECE
4. DESCRIPTION

Les pièces portant une marque ⚠ sont particulièrement importantes par sécurité. S'assurer de les remplacer par des pièces du numéro de pièce spécifié pour maintenir la sécurité et la performance de l'appareil.

REF. NO.	PART NO.	DESCRIPTION	CODE
		INTEGRATED CIRCUITS	
IC1	VHITA7335P/-1	FM Front End (TA7335P)	AG
IC2	VHIAN7223//-1	FM IF/AM (Mixer, Oscillator, IF) (AN 7223)	AK
IC3	VHITA7343P/-1	FM Multiplex (TA7343P)	AG
		DIODES	
D1	VHD1S2076//-U	Static Protector (1S2076)	AB
D3	VHD1S2076//-U	FM Overload (1S2076)	
D4, 5	VHD1S2076//-U	Reverse Current Protector (1S2076)	
		COILS	
L1	RCILA0455AFZZ	FM Band Pass Filter	AC
L2	RCILR0364AFZZ	FM RF	AA
L3	RCILB0628AFZZ	FM Oscillator	AC
L6	RCILA0562AFZZ	SW Antenna	AC
L7	RCILA0559AFZZ	Bar Antenna, MW/LW	AK
L8	RCILB0629AFZZ	SW Oscillator	AC
L9	RCILB0623AFZZ	MW Oscillator	AC
L10	RCILB0627AFZZ	LW Oscillator	AC
		TRANSFORMERS	
T1	RCILI0157AFZZ	FM IF	AC
T2	RCILI0312AFZZ	FM Detector	AC
T3	RCILI0310AFZZ	AM IF	AC
		FILTERS	
CF1	RFILF0080AFZZ	Ceramic, 10.7MHz, FM IF	AD
CF3	RFILA0085AFZZ	Ceramic, 455kHz, AM IF (GF-5454H)	AE
	RFILA0086AFZZ	Ceramic, 468kHz, AM IF (GF-5454E)	AE

REF. NO.	PART NO.	DESCRIPTION	CODE
		CONTROLS	
VC1, 2, VC3, 4, TC1, 2, TC4, 7	RVC-R0083AFZZ	Variable Capacitors Tuning with Trimmers: TC1; FM RF Trimmer TC2; FM Oscillation Trimmer TC4; MW Antenna Trimmer TC7; MW Oscillation Trimmer	AN
VC5	RVC-Z0056AFZZ	Fine Tuning	AE
TC3	RTO-H1072AFZZ	SW Antenna Trimmer	AC
TC5	RTO-H1072AFZZ	LW Antenna Trimmer	AC
TC6	RTO-H1072AFZZ	SW Oscillation Trimmer	AC
TC8	RTO-H1072AFZZ	LW Oscillation Trimmer	AC
VR1	RVR-M0343AFZZ	V.C.O. Adjust, 5K ohm (B)	AB
		ELECTROLYTIC CAPACITORS	
		(All electrolytic capacitors are ±20% type.)	
C12	RC-EZA336AF1C	33MFD, 16V	AB
C13	RC-EZA106AF1C	10MFD, 16V	
C14, 26	RC-EZA476AF1A	47MFD, 10V	
C30	RC-EZA106AF1C	10MFD, 16V	
C41	RC-EZA335AF1H	3.3MFD, 50V	
C42	RC-EZA105AF1H	1MFD, 50V	
C44	RC-EZA475AF1V	4.7MFD, 35V	
C47	RC-EZA227AF1A	220MFD, 10V	
C49, 50	RC-EZA105AF1H	1MFD, 50V	
C76	RC-EZA106AF1C	10MFD, 16V	
C77	RC-EZA107AF1A	100MFD, 10V	
C78	RC-EZA475AF1V	4.7MFD, 35V	
C81	RC-EZA106AF1C	10MFD, 16V	
		CAPACITORS	
		Tubular-shaped type chip capacitor is identified by the symbol MF of the part No. VC..MF.....; this MF does not mean the lead wire.	
C1	VCCSPU1HL180J	18PF, 50V, ±5%, Ceramic	AA
C2	VCTYPU1HX472K	0.0047MFD, 50V, ±10%, Semiconductor	
C3	VCTYPU1HX472K	0.0047MFD, 50V, ±10%, Semiconductor	

REF. NO.	PART NO.	DESCRIPTION	CODE
C4	VCCCPU1HH220J	22PF(CH), 50V, ±5%, Ceramic	AA
C5	VCCCPU1HH330J	33PF(CH), 50V, ±5%, Ceramic	
C6	VCCRPU1HH220J	22PF(RH), 50V, ±5%, Ceramic	
C7	VCCCPU1HH2R0C	2PF(CH), 50V, ±0.25PF, Ceramic	
C8	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	
C9	VCTYPU1EX103M	0.01MFD, 25V, ±20%, Semiconductor	
C11, 15	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	
C16	VCCCMF1HH3R3C	3.3PF(CH), 50V, ±0.25PF	
C17	VCCCPU1HH3R9C	3.9PF(CH), 50V, ±0.25PF, Ceramic	
C25, 27	VCTYMF1CY223N	0.022MFD, 16V, ±30%	
C28	VCKYPU1HB221K	220PF, 50V, ±10%, Ceramic	
C43	VCQSMA1HL102J	0.001MFD, 50V, ±5%, Styrol	AB
C45, 46	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	AA
C61	VCCSPU1HL8R0D	8PF, 50V, ±0.5PF, Ceramic	
C62	VCCSMF1HX680J	68PF, 50V, ±5%	
C63	VCCCMF1HH8R2C	8.2PF(CH), 50V, ±0.25PF	
C64	VCTYPA1EX332K	0.0033MFD, 25V, ±10%, Semiconductor	
C66	VCKYPU1HB331K	330PF, 50V, ±10%, Ceramic	
C67	VCCSPU1HL330J	33PF, 50V, ±5%, Ceramic	
C69	VCCCPU1HH150J	15PF(CH), 50V, ±5%, Ceramic	
C70	VCKYPU1HB271J	270PF, 50V, ±5%, Ceramic	
C72	VCCCPV1HH181J	180PF(CH), 50V, ±5%, Ceramic	
C73	VCCCPU1HH270J	27PF(CH), 50V, ±5%, Ceramic	
C74	VCTYMF1CY223N	0.022MFD, 16V, ±30%	
C79	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	
C80	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	
C84	VCCSPU1HL470J	47PF, 50V, ±5%, Ceramic	
C85	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	
C87	VCTYMF1CY223N	0.022MFD, 16V, ±30%	AA
C88	VCTYPU1EX223M	0.022MFD, 25V, ±20%, Semiconductor	

RESISTORS

Tubular type carbon film resistor (1/4W, ±5%) is identified by the symbol MF of the part No. VRD-MF.....; this MF does not mean the lead wire. Unless otherwise specified resistors are 1/4W, ±5%, Carbon type.

R4	VRD-SU2EE824J	820K ohm	AA
R5	VRD-SU2EE562J	5.6K ohm	
R6	VRD-SU2EE681J	680 ohm	
R7	VRD-SU2EE221J	220 ohm	
R28	VRD-SU2EE332J	3.3K ohm	
R29	VRD-SU2EE680J	68 ohm	
R30	VRD-SU2EE471J	470 ohm	
R41	VRD-SU2EE102J	1K ohm	
R42	VRD-ST2BB103J	10Kohm, 1/8W, ±5%, Carbon	
R43	VRD-SU2EE224J	220K ohm	
R44	VRD-SU2EE471J	470 ohm	
R45	VRD-SU2EE332J	3.3K ohm	
R46	VRD-SU2EE822J	8.2K ohm	
R47	VRD-SU2EE332J	3.3K ohm	
R48	VRD-SU2EE822J	8.2K ohm	
R61	VRD-SU2EE101J	100 ohm	
R63	VRD-SU2EE330J	33 ohm	
R64	VRD-SU2EE470J	47 ohm	
R65	VRD-MF2EE470J	47 ohm	
R68	VRD-SU2EE331J	330 ohm	
	VRD-MF2EE000C	0 ohm, 1/4W, ±10.25 ohm, Jumper	

MISCELLANEOUS

⚠108	HINDP0444AFSA	Label, Specification (GF-5454H)	AC
⚠108	HINDP0510AFSA	Label, Specification (GF-5454E)	AC
	SPAKA0832AFZZ	Packing Add. (Left)	AE
	SPAKA0833AFZZ	Packing Add. (Right)	AE
	SPAKC1920AFZZ	Packing Case	AG
	SSAKH0087AGZZ	Polyethylene Bag, Unit	AB
	SSAKH0129AFZZ	Polyethylene Bag, Operation Manual	AB
	TINSZ0371AFZZ	Operation Manual	AF
	TMAPC0851AFZZ	Schematic Diagram	

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